CLAIMS

1. A method of printing a document containing a printed pattern of position identification pattern markings comprising:
providing to a printer a set of print instructions which define the content of a document;
generating at the printer a pattern using pattern information that is independent from the print instructions;
and printing a document that comprises both the content and the pattern.

2. The method of claim 1 in which the print instructions include at least one pattern instruction indicating that a pattern is to be added by the printer to the document and the printer adds a pattern to the printed document in response to the at least one pattern instruction.

3. The method of claim 2 in which the pattern instruction comprises a pattern ID and in which the step of generating the pattern at the printer comprises adding a portion of pattern identified by the ID.

4. The method of claim 2 in which the pattern instruction comprises an address or an instruction corresponding to an address, and the step of generating the pattern comprises causing the printer to request an appropriate pattern from a server having a network address identified by the pattern instruction.

5. The method of any preceding claim in which the pattern is allocated to the document at the printer after initiating the transmission of the document instructions to the printer.

6. The method of claim 1 in which a pattern is allocated to the document prior to sending the document to the printer and in which the instructions sent to the printer include a plurality of pattern instructions, each one indicating the location of a pattern marking on the document and in which the printer generates the pattern to be printed by creating the appropriate position indication marking for each location.

7. The method of claim 6 in which the printer includes a look-up table or library in a memory which stores instructions which tell the printer how to produce a position identification marking for use in creating the pattern.

8. The method of claim 6 or claim 7 in which the printer includes a raster image processor which receives the print instruction set and is adapted to retrieve a bitmap corresponding to each position indication marking identified by a pattern instruction contained in the print instructions from the library.

9. The method of any one of claims 6,7 or 8 in which the pattern comprises multiple instances of a single position identification marking provided at locations offset from the intersections of a virtual grid across a portion of the document, and in which the pattern instructions identify the position of each marking relative to the grid.

10. The method of any one of claims 1 to 9 in which the printer includes a look-up table in a memory which stores a pattern which is sufficient to cover and area larger than the area of a document to be printed and in which the pattern instruction identifies the location of a portion of the stored pattern to be printed on the document.

11. The method of any preceding claim in which the printer is adapted to produce a bitmap corresponding to the content and a bitmap corresponding to the pattern and in which the two bitmaps are combined to produce a bitmap for the document to be printed.

12. The method of any preceding claim in which the set of instructions generated at the host device comprise printer job language (PJL) instructions indicating that a pattern is to be included and/or instructions in a page description language defining the content.

13. The method of any preceding claim in which the printer is arranged to add a different pattern to each copy of a document that it prints from a set of print instructions.

14. Apparatus for printing a document containing position identification pattern markings, the apparatus including a printer having an interpreting means arranged to create the pattern to be printed in response to receipt of a set of print instructions, the print instructions defining the content of the document using pattern information that is separate from the print instructions.

15. The apparatus of claim 14 in which the printer comprises a part of a photocopier and in which the print instructions comprise an electronic version of an original document which is captured by a scanner of the photocopier.

16. The apparatus of claim 14 in which the print instructions include at least one pattern instruction indicating that a pattern is to be printed on the document

17. The apparatus of claim 14,15 or 16 further comprising:
a printing application stored on a host device which is arranged to receive a file defining the content of the document and to generate a set of print instructions which comprise instructions that define the content of the document to be printed and at least one pattern instruction which indicates that a pattern is to be included in the printed documents.

18. The system of claim 17 in which the interpreting means comprises a raster image processor and in which the print instructions produced by the host device are in a page description and/or print job language.

19. The system of claim 16 in which the pattern instruction in the print instruction set comprises a PJL command and in which the RIP is provided with a function which is called by the PJL command.

20. The system of claim 16 in which the pattern instruction comprises a network address and in which the printer includes a network connection to a processor identified by the network address, pattern request means for requesting pattern from the processor, and pattern receiving means for receiving from the processor an appropriate pattern in response to the pattern request.

21. The system of claim 20 in which the pattern requesting and receiving means comprises program instructions stored in a memory of the processor which are executed whenever the RIP processes a pattern instruction in a print instruction set.

22. A printer for printing a document which includes a pattern of position identification markings which includes:
means for receiving a print file containing a set of print instructions for the printing of a document, and means for creating the required pattern in response to at least one pattern instruction contained in the print file using pattern information that is obtained independently from the print file.

23. The printer of claim 22 in which the print instructions include at least one print instruction that comprises a pattern ID.

24 The printer of claim 22 in which the pattern instruction comprises an address, the method comprising at the printer requesting an appropriate pattern from a server identified by the address, and adding the pattern received in response to the request to the document bitmap

25. The printer of claim 22 in which the print instructions include a plurality of pattern instructions which each indicate the location of at least one position identification marking in the document, the printer generating the pattern marking to be provided at the indicated location independent of the content of the print instructions.

26. A printing application which is arranged to receive a file defining a document to be printed and to produce a set of print instructions which comprise instructions that define the content of the document to be printed and at least one pattern instruction which when interpreted by a printer causes the printer to provide a position indication marking pattern on the printed document.

27. The printing application of claim 26 in which the print instructions include at least one pattern instruction that comprises a pattern ID.

28 The printing application of claim 26 in which the pattern instruction comprises a network address of a processor which can supply pattern to the printer.

29. The printing application of claim 26 in which the pattern instructions include a plurality of pattern instructions which each indicate the location of at least one position identification marking in the document without indicating the appearance of the marking at each location, the instructions being provided in a language that can be interpreted by a printer.

30. The application of claim 26 which comprises a printer driver or a filter which receives a file containing program instructions defining a document from a document processing application and passes the instructions to a printer driver after having added the pattern instructions to the file.

31. The printing application of any one of claims 26 to claim 30 which is adapted to generate a set of different patterns or portions of pattern and to produce a set of different copies of an original document by combining the content with one of the set of different patterns.

32. A method of printing a document comprising:
receiving a set of print instructions defining the content of a document;

generating a set of different patterns of position identification markings; and

printing a plurality of copies of the document in which each printed copy comprises both the content and one of the patterns of the set.

33. Apparatus arranged to produce multiple copies of a source document comprising:

receiving means for receiving a set of print instructions defining the content of the source document;

processing means for generating a set of different patterns or portions of pattern; and

printing means for printing a plurality of copies of the source document in which each printed copy comprises both the content of the source document and one of the patterns of the set.

34. The apparatus of claim 33 which comprises a printer in which the processing means for adding pattern resides at the printer.

35. Apparatus according to claim 33 in which the processing means for adding pattern comprises a computer program which resides on a host computer connected to the printing means.

36. Apparatus according to claim 35 in which the computer program comprises a printer driver

37. Apparatus according to claim 33 which comprises a photocopier which further includes:

i) an optical scanner for scanning the source document and producing output signals representing an image of the source document;

i) in which the means comprises an image processor for performing at least one processing step on the output signals produced by the scanner to produce modified signals representing a modified image of the scanned document; and

iii) in which the printer is responsive to the modified image signals for printing a modified image represented by the modified image signals; and wherein the processing step performed by the processor comprises embedding a pattern of positional markings within the image of the scanned document which markings can be detected by a suitable detection system and used to distinguish different positions on the documents.

38. A photocopier comprising:

i) an optical scanner for scanning a document and producing output signals representing an image of the scanned document;

ii) an image processor for performing at least one processing step on the output signals produced by the scanner to produce modified signals representing a modified image of the scanned document; and

iii) a printer responsive to the modified image signals for printing a modified image represented by the modified image signals;

and wherein the processing step performed by the processor comprises embedding a pattern of positional markings within the image of the scanned document which markings can be detected by a suitable detection system and used to distinguish different positions on the documents.

39. The photocopier of claim 38 in which the photocopier applies a pattern of markings which comprises a portion of pattern selected from a larger pattern space, the selected portion being dependent upon the identity of the photocopier.

40. The photocopier of claim 38 or claim 39 in which the photocopier is adapted to generate a different pattern for each copy that is made of a single source document, or a unique pattern for each copy it makes of any document.

41. The photocopier of claim 38,39 or 40 in which the photocopier includes a network connection that enables the photocopier to request a pattern information from a remote device and receive the requested pattern information from the remote device, the processor embedding a pattern in accordance with the received pattern information.

42. The photocopier of claim 41 in which the photocopier is further adapted to transmit to the remote device an electronic copy of the scanned document.

43. A controller for a photocopier comprising:
input means for receiving an input image from a scanner of the photocopier;
output means for passing an output image to a printer of the photocopier;
and a processing means which is adapted to modify the input image to produce the output image by embedding a pattern of positional markings within the image of the scanned document which markings can be detected by a suitable detection system and used to distinguish different positions on the documents.

44. A data carrier which carries program instructions which when processed by a controller of a photocopier cause the controller to:
receive an input image from a scanner of the photocopier;

modify the input image to produce a modified image by embedding a pattern of positional markings within the image of the scanned document which markings can be detected by a suitable detection system and used to distinguish different positions on the documents; and

pass the output image to a printer of the photocopier.

45. A photocopier arranged to produce multiple copies of a source document comprising:

i) an optical scanner for scanning a document and producing output signals representing an image of the scanned document;

ii) an image processor for performing at least one processing step on the output signals produced by the scanner to produce a set of modified signals representing a plurality of modified images of the scanned document, each modified image being unique with respect to the other images in the set; and

iii) a printer responsive to the modified image signals for printing a modified image represented by the modified image signals.

46. The photocopier of claim 45 wherein the processing step performed by the processor comprises embedding a different pattern of positional markings within each modified image of the set which markings can be detected by a suitable detection system and used to distinguish different positions on the documents.

47. A photocopier which is adapted to produce a plurality of different, modified documents, from an original source document by embedding identification information in each of the copies.

48. A photocopier according to claim 47 in which the embedded information comprises one or more of:-

-A pattern of positional markings
- A bar code
- A serial number
-An identification marking.

49. A method of printing a document containing position identification pattern markings stored on a host device by a printer comprising at the host device:
generating a set of print instructions which comprise instructions that define the content of the document to be printed and at least one pattern instruction which indicates that a pattern is to be included in the printed documents, the instructions being provided in a language that can be interpreted by a printer;
sending the set of print instructions to a printer connected to the host device;
and at the printer processing the print instructions to create the document to be printed including a pattern identified by the at least one pattern instruction.

50. A system for printing a document containing position identification pattern markings comprising:
a printing application stored on a host device which is arranged to receive a file defining the content of the document and to generate a set of print instructions which comprise instructions that define the content of the document to be printed and at least one pattern instruction which indicates that a pattern is to be included in the printed documents, and a printer which includes interpreting means for interpreting the instructions provided in the set of print instructions to produce the document to be printed including a pattern identified by the at least one pattern instruction.

51 A photocopier arranged to produce multiple copies of a source document comprising:
i) an optical scanner for scanning a document and producing output signals representing an image of the scanned document;
ii) an image processor for performing at least one processing step on the output signals produced by the scanner to produce a set of modified signals representing a plurality of modified images of the scanned document, each modified image being unique with respect to the other images in the set; and
iii) a printer responsive to the modified image signals for printing a modified image represented by the modified image signals.

52 The photocopier of claim 8 wherein the processing step performed by the processor comprises embedding a different pattern of positional markings within each modified image of the set which markings can be detected by a suitable detection system and used to distinguish different positions on the documents.

53. A method of printing a document containing position identification pattern markings stored on a host device by a printer comprising at the host device:
generating a set of print instructions which comprise instructions that define the content of the document to be printed and a plurality of pattern instructions which each indicate the location of at least one position identification marking in the document, the instructions being provided in a language that can be interpreted by a printer;
sending the set of print instructions to a printer connected to the host device;
and at the printer processing the print instructions to produce a bitmap image of the document to be printed including a pattern which includes a plurality of position markings provided at the locations

indicated by the pattern instructions included in the set of print instructions

54. A system for printing a document containing position identification pattern markings comprising:
a printing application stored on a host device which is arranged to receive a file defining the content of the document and to generate a set of print instructions which comprise instructions that define the content of the document to be printed and a plurality of pattern instructions which each indicate the location of at least one position identification marking in the document, the instructions being provided in a language that can be interpreted by a printer; and a printer which includes interpreting means for interpreting each of the pattern instructions provided in the set of print instructions to produce a bitmap image of a position identification marking to be printed at a location indicated by the pattern instruction, the pattern instructions being independent of the resolution of the printer.